

Title (en)

METHODS OF FORMING SINTERED BORON CARBIDE

Title (de)

VERFAHREN ZUR FORMUNG VON GESINTERTEM BORONCARBID

Title (fr)

PROCÉDÉS DE PRODUCTION DE CARBURE DE BORE DE FRITTÉ

Publication

**EP 2456733 A4 20130313 (EN)**

Application

**EP 10802902 A 20100722**

Priority

- US 27169409 P 20090724
- US 2010042912 W 20100722

Abstract (en)

[origin: WO2011011606A2] A method of forming a sintered boron carbide body includes washing boron carbide powder with essentially pure water at an elevated temperature to generate low oxygen boron carbide powder, mixing a sintering aid and a pressing aid with the low oxygen boron carbide powder to form a green mixture, and shaping the green mixture into a green boron carbide body. The method can include mixing titanium carbide powder having an average particle diameter in a range of between about 5 nm and about 100 nm with the low oxygen boron carbide powder. The method can further include sintering the green boron carbide body, and hot isostatic pressing the sintered body, to a density greater than about 98.5% of the theoretical density (TD) of boron carbide. Alternatively, the method can include sintering the shaped boron carbide green body at a temperature greater than about 2,200 °C, to thereby form a eutectic liquid solid solution of B<sub>4</sub>C/SiC, forming a sintered boron carbide body with a density greater than about 98% TD.

IPC 8 full level

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CPC (source: EP US)

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Citation (search report)

- [X] WO 2009020635 A2 20090212 - SAINT GOBAIN CERAMICS [US], et al
- [X] US 5505899 A 19960409 - SIGL LORENZ [AT], et al
- See references of WO 2011011606A2

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